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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/293,737	04/16/1999	GORDON B. DOW	07844-315001	5291

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EXAMINER

ANYA, CHARLES E

ART UNIT PAPER NUMBER

2126

DATE MAILED: 08/14/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/293,737

Applicant(s)

DOW, GORDON B.

Examiner

Charles E Anya

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②

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 11 recites the limitation "the application" in 4. There is insufficient antecedent basis for this limitation in the claim.

For the purpose of this office action the Examiner would assume that the phrase "the application" means "the computer program application".

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1,2,5 – 7, 9,10,28 – 30 and 35 – 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,404,428 to Wu in view of U.S. Pat. No. 5,929,864 to Picott et al.**

As to claim 1, Wu teaches a set of objects each having a value ("...Context..." Col. 8 Ln. 11 – 17), the set of objects includes object A

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("...derived data/derived item/item..." Col. 8 Ln. 11 – 67, Col. 9 Ln. 11 – 61) and object B ("...view model..." Col. 9 Ln. 42 – 47), the value of object A is a function of the value of object B ("...change..." Col. 8 Ln. 11 – 43), changing the value of object B marks object A as dirty/not re-computing the value of object A until object A is queried for a value/invalidating the dependents of object B and all of its dependents, when the value of object B changes ("...invalid..." Col. 8 Ln. 11 – 43, Col. 9 Ln. 1 – 10) and causing the each invalidated observer-only object to re-compute its value by querying the values of the objects from which the observer-only depends ("...until..." Col. 8 Ln. 24 – 26).

Although Wu teaches a dependency graph that causes a change in the value of an object to affect the value of another/dependent object, Picott explicitly teaches claimed limitation of the value of object A as the function of the value of object B ("Dependency..." Col. 4 Ln. 25 – 26, Col. 7 Ln. 19 – 35). It would have been obvious to apply the teaching of Picott to the system of Wu. One would have been motivated to make such a modification in order to exchange data between nodes (Col. 7 Ln. 19 – 20).

As to claim 2, see the rejection of claim 1.

As to claim 5, Wu teaches breaking any dependency relationships an object may have had when the object is marked as being dirty ("...invalid...invalidate(s)..." Col. 8 Ln. 11 – 43) and identifying the objects on which the recomputed value depends and as dependent only on the identified object when the value of an object is re-computed ("calculations..." Col. 9 Ln. 8 – 41).

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As to claim 6, Wu teaches a set of objects that includes settable objects (“...view model...” Col. 9 Ln. 1 – 44) and dependent objects (“derived item...” Col. 9 Ln. 1 – 10) and each dependent object maintains a flag (“validity flag...” Col. 9 Ln. 1 – 10) whose setting marks the dependent object as valid or invalid (Col. 9 Ln. 1 – 56).

As to claim 7, claim 1 covers claim 7 except for identifying the objects upon which a given object depends as those objects into which the given object passed itself as a requester during execution of a compute method of the given object.

Wu teaches for identifying the objects upon which a given object depends as those objects into which the given object passed itself as a requester during execution of a compute method of the given object (“Each derived item...” Col. 9 Ln. 1 – 7).

As to claim 9, see the rejection of claim 6.

As to claim 10, Wu teaches using requester object to make each operation’s queries/establishing a requester object and each object relationship for whose value is available for querying (“...pipeline request...” Col. 9 Ln. 1 – 61, Col. 10 Ln. 42 – 55) and if the value of any of the objects is not available for querying interrupt and terminate all requester object relationship, then retry the operation (“...valid/invalid...” Col. 1 – 61).

As to claims 28 and 35, see the rejection of claim 1.

As to claims 29 and 36, see the rejection of claim 7.

As to claims 30 and 37, see the rejection of claim 10.

**Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,404,428 to Wu in view of U.S. Pat. No. 5,929,864 to Picott et al. as applied to claim 1 above, and further in view of U.S. Pat. No. 5,251,290 to Pabon.**

As to claim 3, Wu as modified in claim 1 is silent with reference to providing a handleRequest method that adds a requester owned by a dependent object/object A to a dependents list for root object/object B and the dependents list identifies all objects whose value is a function of the value of the root object/object B.

Pabon teaches providing a handleRequest method that adds a requester owned by a dependent object/object A to a dependents list for root object/object B (“...assign or match...” Col. 8 Ln. 43 – 67; NOTE: Although the handleRequest method is not explicitly taught the assign/match technique inherently involves assigning the geometric entities to the dependents list of the constraint) and the dependents list identifies all objects whose value is a function of the value of the root object/object B (“...ordered dependent list...” Col. 3 Ln. 1 – 13, Col. 8 Ln. 29 – 42, Col. 9 Ln. 1 – 16). It would have been obvious to apply the teaching of Pabon to the system of Wu. One would have been motivated to make such modifications to provide sequence of execution to update geometric entities if the value of a constraint changes (Col. 3 Ln. 6 – 13).

As to claim 4, see the rejection of claim 3.

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**Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,404,428 to Wu in view of U.S. Pat. No. 5,929,864 to Picott et al. as applied to claim 7 above, and further in view of U.S. Pat. No. 5,689,711 to Bardasz et al.**

As to claim 8, Wu is silent with reference to the dependent objects that changes based on the computation of dependents and not the root object itself.

Bardasz teaches the dependent objects that changes based on the computation of dependents and not the root object itself (“...only operators...” Col. 7 Ln. 22 – 38). It would have been obvious to apply the teaching of Bardasz to the system of Wu. One would have been motivated to make such a modification in order to save computational time (Col. 7 Ln. 34 – 38).

**Claims 11 – 27, 31 – 34 and 38 – 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,505,228 B1 to Schoening et al. in view of U.S. Pat. No. 6,128,771 to Tock.**

As to claim 15, Schoening teaches creating a transaction, registering with the transaction on or more changes to objects, each change being made to a corresponding changing object (...Transaction transaction=new Transaction().../transaction.register()...” Col. 52 Ln. 1 – 34), traversing a dependency graph from the changing (“...traverses...” Col. 24 Ln. 49 – 59), marking the dependent object dirty and detaching the object (markDirty method 708 Col. 26 Ln. 60 – 67, Col. 27 Ln. 1 – 24, “...markDirty() function...” Col. 52 Ln. 35 – 54).

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Schoening is silent with reference to accumulating each leaf object encountered in traversing the dependency graph in a strobe queue and traversing the strobe queue after all changes have been registered, synchronizing each leaf object by recomputing values for object marked as dirty and rejoining recomputed objects with the dependency graph.

Tock teaches accumulating each leaf object encountered in traversing the dependency graph in a strobe queue (“...PDD...” Col. 9 Ln. 35 – 55) and traversing the strobe queue after all changes have been registered, synchronizing each leaf object by recomputing values for object marked as dirty and rejoining recomputed objects with the dependency graph (“...converted...” Col. 9 Ln. 5 – 59). It would have been obvious to apply the teaching of Tock to the system of Schoening. One would have been motivated to make such modifications in order to commit a transaction (Col. 9 Ln. 26 – 31).

As to claim 16, Schoening teaches the dependency graph as an application state (SMFDefinitionPONode Objects Col. 22 Ln. 49 – 65), the roots of the dependency graph are settable objects of the application state (Root Node 1230 Col. 23 Ln. 43 – 53) and intermediate nodes as dependent objects whose values are the results of intermediate computations (“...Service Module Functions...” Col. 24 Ln. 35 – 48).

As to claim 17, Schoening teaches the leaf objects as coupled to a user interface (GUI Col. 49 Ln. 40 – 50).

As to claim 18, see the rejection of claim 17.



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As to claims 11,12,13,23,26,27,31,32,38 and 39, see the rejection of claims 15.

As to claim 14, Schoening teaches the request object that is operating to request an object's value so that the requested value cannot change until the requester object is terminated and all objects whose values are requested are released ("...deferred..." Col. 49 Ln. 31 – 39).

As to claims 24, 34 and 41, see the rejection of claims 16 and 3.

As to claim 25, see the rejection of claim of 14.

As to claim 33, Schoening teaches managing dependency among a set of objects (Figure 2D Col. 22 Ln. 49 – 67, Col. 23 Ln. 1 – 53), each object of the set having a value (Unit Value 208 Col. 22 Ln. 66 – 67, Value 1202 Col. 23 Ln. 1 – 42), the set includes dependent objects (Nodes 1240, 1238 and 1236 Col. 23 Ln. 27 – 53), each dependent object having value that is a function of the values of one or more of the other objects ("...pre-condition..." Col. 23 Ln. 27 – 42), means for determining a time at which objects calculate their values ("...timeBase..." Col. 23 Ln. 12 – 19) and means for calculating the dependency among objects in the set dynamically at the time objects calculates their values ("...event generation..." Col. 51 Ln. 56 – 67).

As to claims 19 and 40, see the rejection of claim 33.

As to claim 21, Bardasz teaches each settable object as having a value-setting method that takes two arguments, a transaction argument and a new value argument (EvalGroup(transaction, members, evalsequence)..." Col. 40 Ln. 46).

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As to claim 20, claim 21 covers claim 20 except for returning a current value of the observed object.

Schoening teaches for returning a current value of the observed object (“...adds objects...” Col. 53 Ln. 24 – 35).

As to claim 22, Schoening teaches each object in the set as a descendant of a VValue class (“Persistent Object Class Col. 26 Ln. 39 – 67), each computation operation is represented by a Request object that is owned by a dependent VValue object and the Requester object enters the dependent set of one or more VValue objects from which the dependent VValue depends (Service Module Function 76a-76n Col. 26 Ln. 50 – 67) and using the Requester object by the dependent object to obtain the object values the dependent object needs to calculate its own value (Col. 27 Ln. 1 – 24).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E Anya whose telephone number is (703) 305-3411. The examiner can normally be reached on M-F (8:30-5:30) First Friday off.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7240 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Charles E Anya  
Examiner  
Art Unit 2126

*Suebas*

**Attachment for PTO-948 (Rev. 03/01, or earlier)**  
**6/18/01**

**The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.**

**INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

**1. Correction of Informalities -- 37 CFR 1.85**

New corrected drawings must be filed with the changes **incorporated** therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

**2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.**

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

**Timing of Corrections**

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a).

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.